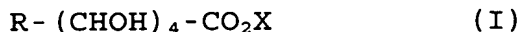


IN THE CLAIMS

1. (currently amended) A method for complexing metal cations present in either a reducing composition for bleaching or permanently reshaping keratin fibres, or keratin fibres, wherein said reducing composition comprises at least one reducing agent, comprising the step of:

~~Use of at least one compound corresponding to the general formula (I) below:~~

mixing said reducing composition with at least one compound of formula (I):



~~in which~~wherein:

- ~~R represents is a group~~ CH₂OH or CO₂X group, and
- ~~X represents is a~~ hydrogen atom or a monovalent or divalent cation derived from an alkali metal, from an alkaline-earth metal, from a transition metal, or from an organic amine, or an ammonium cation.

~~in a reducing composition for bleaching or permanently reshaping keratin fibres, for complexing the metal cations present in this composition and/or on the keratin fibres onto which said composition is intended to be applied.~~

2. (currently amended) ~~Use according to Claim~~The method of claim 1, in which~~wherein the~~said monovalent or divalent cation is chosen from the group consisting of a monovalent alkali metal cations, a divalent alkaline-earth metal cations, a divalent transition metal cations and/or a monovalent cations derived from an organic amines or from an ammonium cation.

3. (currently amended) ~~Use according to Claim~~The method of claim 1 or Claim 2, in which~~wherein the~~said compound(s) of formula (I) is(are) chosen from the group consisting of gluconic acid, ~~the~~an alkali metal salts thereof, ~~the~~an alkaline-earth metal salts thereof, ~~the~~a transition metal salts thereof, ~~the~~an organic amine salts thereof and ~~the~~an ammonium salts thereof, and/or a mixtures thereof.

4. (currently amended) ~~Use according to any one of Claims 1 to 3~~The method of claim 1, in which wherein the said compound(s) of formula (I) ~~is(are) chosen from the group consisting of~~ gluconic acid, sodium gluconate, potassium gluconate, anhydrous calcium gluconate, calcium gluconate monohydrate, calcium borogluconate, magnesium gluconate, iron gluconate, manganese gluconate, zinc gluconate and/or copper gluconate.

5. (currently amended) ~~Use according to Claim 1 or Claim 2~~The method of claim 1, in which wherein the said compound(s) of formula (I) ~~is(are) chosen from the group consisting of~~ mucic acid, glucaric acid ~~and~~ mannaric acid, ~~the an~~ an alkali metal salts thereof, an the alkaline-earth metal salts thereof, a the transition metal salts thereof, an the organic amine salts thereof, and an the ammonium salts thereof, and/or a mixtures thereof.

6. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which wherein the said compound(s) of formula (I) ~~is(are) chosen from~~ gluconic acid and/or mucic acid.

7. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which wherein the said compound(s) of formula (I) ~~represent(s)~~ is present in an amount from 0.001% to 10% by weight relative to the total weight of the reducing composition.

8. (currently amended) The method of claim 7, Use according to any one of the preceding claims, in which wherein the said compound(s) of formula (I) ~~represent(s)~~ is from 0.001% to 5% by weight relative to the total weight of the reducing composition.

9. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which wherein the said reducing composition comprises one or more reducing agents chosen from a ~~the group consisting of~~ reductones and/or a the salts and/or esters thereof, a sulphites and/or a sulphinates.

10. (currently amended) ~~Use according to any one of Claims 1 to 8~~The method of claim 1, in which~~wherein the said~~ reducing composition comprises one or more reducing agents chosen from the ~~group consisting of~~ a thiols, ~~a~~the salts ~~and/or~~ esters thereof, ~~a~~ sulphites ~~and/or~~ a sulphinates.

11. (currently amended) ~~Use according to Claim~~The method of claim 10, in which~~wherein the said~~ reducing agent(s) is(are) chosen from the ~~group consisting of~~ thioglycolic acid, thiolactic acid, cysteine, and cysteamine, ~~the~~a salts ~~and/or~~ esters thereof.

12. (currently amended) ~~Use according to any one of Claims 9 to 11~~The method of claim 1, in which~~wherein the said~~ reducing agent(s) represent(s)is present in an amount from 0.1% to 30% by weight relative to the total weight of the reducing composition.

13. (currently amended) ~~Use according to any one of Claims 9 to 12~~The method of claim 12, in which~~wherein the said~~ reducing agent(s) represent(s)is present in an amount from 0.5% to 20% by weight relative to the total weight of the reducing composition.

14. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which~~wherein the said~~ reducing composition ~~also~~further comprises ~~a one or more~~ cationic or amphoteric conditioning polymers, ~~in proportions of from 0.01% to 10% by weight and preferably from 0.05% to 5% by weight relative to the total weight of said composition~~

15. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which~~wherein the said~~ reducing composition ~~also~~further comprises ~~a one or more~~ amphiphilic polymer which is nonionic, anionic, ~~or~~ cationic ~~or~~ amphoteric ~~amphiphilic~~ polymers, wherein said amphiphilic polymer comprises, ~~comprising~~ a hydrophobic chain, ~~in proportions of from 0.05% to 20% by weight and preferably from 0.1% to 10% by weight relative to the total weight of said composition.~~

16. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which~~wherein the said~~ reducing composition ~~also~~further comprises ~~one or more~~a surfactants~~.~~, ~~in proportions of from 0.01% to 40% by weight and preferably from 0.1% to 30% by weight relative to the total weight of said composition.~~

17. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which~~wherein the said~~ reducing composition ~~also~~further comprises ~~one or more~~a rheology modifiers other than said amphiphilic polymers of claim 15.~~the nonionic, anionic, cationic or amphoteric amphiphilic polymers, comprising a hydrophobic chain.~~, ~~in proportions of from 0.05% to 20% by weight and preferably from 0.1% to 10% by weight relative to the total weight of said composition.~~

18. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which~~wherein the said~~ reducing composition ~~also~~further comprises ~~one or more~~a acidifying or basifying agents~~.~~, ~~in proportions of from 0.01% to 30% by weight relative to the total weight of said composition.~~

19. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which~~wherein the said~~ reducing composition ~~also~~further comprises ~~one or more~~a solvents chosen from the ~~group consisting of water and~~ or ~~a~~ mixtures composed of water and of one or more cosmetically acceptable organic solvents~~.~~, ~~this or these solvent(s) representing from 0.5% to 20% by weight and preferably from 2% to 10% by weight relative to the total weight of said composition.~~

20. (currently amended) ~~Use according to any one of the preceding claims~~The method of claim 1, in which~~wherein the said~~ reducing composition ~~also~~further comprises one or more adjuvants chosen from the ~~group consisting of a~~ mineral or organic fillers, binders, lubricants, antifoams, silicones, dyes, matting agents, preserving agents ~~and~~or fragrances.

21. (currently amended) ~~Use according to any one of the preceding claims~~ The method of claim 1, in which ~~wherein the said~~ reducing composition is a composition intended for bleaching or permanently reshaping human keratin fibres, ~~and preferably the hair.~~

22. (currently amended) A ~~R~~ reducing composition for bleaching or permanently reshaping keratin fibres, comprising:

- a) -at least one reducing agent, and
- b) ~~characterized in that it also comprises at least one compound corresponding to the general of formula (I) below:~~



~~in which~~ wherein:

- ~~R represents is a group~~ CH₂OH or CO₂X group, and
- ~~X represents is a hydrogen atom or a monovalent or divalent cation derived~~ chosen from an alkali metal, ~~from an alkaline-earth metal, from a transition metal, or from an organic amine, or an ammonium cation,~~

with the proviso that,

when the said compound of formula (I) is gluconic acid or a salt thereof, said reducing agent is chosen from cysteamine ~~and the or~~ a salts and/or esters thereof, a sulphites, a sulphinates ~~and or~~ a reductones, with the exception of ascorbic acid, ~~whereas~~ and,

~~when the~~ said compound of formula (I) is glucaric acid, said reducing agent is not cysteine or a salt thereof.

23. (currently amended) ~~The c~~ Composition according to of ~~claim 22, characterized in that~~ wherein the said monovalent or divalent cation is ~~chosen from the group consisting of a~~ monovalent alkali metal cations, a divalent alkaline-earth metal cations, a divalent transition metal cations ~~and/or~~ a monovalent cations ~~derived~~ chosen from organic amines or ~~from ammonium.~~

24. (currently amended) ~~The c~~ Composition according to of ~~claim 22 or claim 23, characterized in that~~ wherein the said compound(s) of formula (I) ~~is (are) chosen from the group~~

~~consisting of~~ gluconic acid, ~~an~~the alkali metal salts thereof, ~~thean~~an alkaline-earth metal salts thereof, ~~a~~the transition metal salts thereof, ~~an~~the organic amine salts thereof ~~and~~or ~~an~~the ammonium salts thereof, ~~and~~or a mixtures thereof.

25. (currently amended) ~~The cComposition according to any one of cClaims 22 to 24, characterized in that~~wherein the said compound(s) of formula (I) is(are) ~~chosen from the group consisting of~~ gluconic acid, sodium gluconate, potassium gluconate, anhydrous calcium gluconate, calcium gluconate monohydrate, calcium borogluconate, magnesium gluconate, iron gluconate, manganese gluconate, zinc gluconate ~~and~~or copper gluconate.

26. (currently amended) ~~The cComposition according to of Claim 22 or Claim 23, characterized in that~~wherein the said compound(s) of formula (I) is(are) ~~chosen from the group consisting of~~ mannonic acid, altronic acid, idonic acid, galactonic acid, talonic acid, gulonic acid ~~and~~or allonic acid, ~~thean~~an alkali metal salts thereof, ~~thean~~an alkaline-earth metal salts thereof, ~~thea~~the transition metal salts thereof, ~~an~~the organic amine salts thereof ~~and~~or ~~thean~~an ammonium salts thereof, ~~and~~or a mixtures thereof.

27. (currently amended) ~~The cComposition according to of cclaim 22 or Claim 23, characterized in that~~wherein the said compound(s) of formula (I) is(are) ~~chosen from the group consisting of~~ glucaric acid, ~~the~~an alkali metal salts thereof, ~~thean~~an alkaline-earth metal salts thereof, ~~a~~the transition metal salts thereof, ~~an~~the organic amine salts thereof ~~and~~or ~~an~~the ammonium salts thereof, ~~and~~or a mixtures thereof.

28. (currently amended) ~~The cComposition according to of cclaim 22 or Claim 23, characterized in that~~wherein the said compound(s) of formula (I) is(are) ~~chosen from~~ mucic acid, mannaric acid, altraric acid, idaric acid, talaric acid, gularic acid ~~and~~or allaric acid, ~~an~~the alkali metal salts thereof, ~~thean~~an alkaline-earth metal salts thereof, ~~a~~the transition metal salts

thereof, anthe organic amine salts thereof and/or thean ammonium salts thereof, and/or a mixtures thereof.

29. (currently amended) The cComposition according to of cClaim 2228, characterized in that wherein the said reducing agent(s) is(are) chosen from the group consisting of a reductones, a thiols and/or athe salts and/or esters thereof, a sulphites and/or a sulphinates.

30. (currently amended) The cComposition according to of cClaim 22 or Claim 23, characterized in that wherein the said compound(s) of formula (I) is(are) chosen from gluconic acid and/or mucic acid.

31. (currently amended) The cComposition according to of cClaim 3022, characterized in that wherein said compound of fomula (I) is it comprises gluconic acid as complexing agent and/or said reducing agent is sodium sulphite and/or sodium hydroxymethane sulphinate as reducing agent(s).

32. (currently amended) The cComposition according to of cClaim 2230, characterized in that wherein said compound of formula (I) is it comprises mucic acid as complexing agent and ascorbic acid and/or said reducing agent is sodium sulphite and/or sodium hydroxymethane sulphinate as reducing agent(s).

33. (currently amended) The cComposition according to of cClaim 3022, characterized in that wherein said compound of formula (I) is it comprises mucic acid as complexing agent and/or said reducing agent is thioglycolic acid and/or cysteine and/or lactic acid as reducing agent(s).

34. (currently amended) The cComposition according to any one of cClaims 22 to 33, characterized in that wherein the said compound(s) of formula (I) represent(s) is present in an amount of from 0.001% to 10% by weight and preferably from 0.001% to 5% by weight relative to the total weight of said composition.

35. (currently amended) The cComposition according to any one of cClaims 22 to 34, characterized in that wherein the said reducing agent(s) represent(s) is present in an amount of from

0.1% to 30% by weight, and preferably from 0.5% to 20% by weight relative to the total weight of said composition.

36. (currently amended) ~~The cComposition according to any one of cClaims 22 to 35, characterized in that it also comprises one or more constituents~~ further comprising a compound selected chosen from a the group consisting of:

- a) a cationic or amphoteric conditioning polymers,
- b) an amphiphilic polymer which is nonionic, anionic, cationic, or amphoteric, wherein said amphiphilic polymer comprises a hydrophobic chain,
- c) a surfactants,
- d) a rheology modifiers other than ~~the said nonionic, anionic, cationic or amphoteric amphiphilic polymer of (b)s, comprising a hydrophobic chain,~~
- e) a pH modifiers and
- f) a solvents.

37. (currently amended) ~~The cComposition according to any one of cClaims 3622 to 36, characterized in that it also comprises one or more~~ further comprising an adjuvants chosen from the group consisting of a mineral or organic fillers, a binders, a lubricants, an antifoams, a silicones, a dyes, a matting agents, a preserving agents and/or a fragrances.

38. (currently amended) A method of Process for bleaching or permanently reshaping keratin fibres, comprising the steps consisting in of:

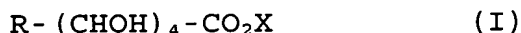
- a) applying to the keratin fibres a the reducing composition ~~according to of cClaims 22 to 37;~~
- b) leaving the reducing composition to stand on the keratin fibres for a sufficient time ~~that is sufficient to obtain the desired bleaching or permanent reshaping;~~
- c) rinsing ~~the said~~ keratin fibres to remove the ~~oxidizing~~ reducing composition therefrom;
- d) washing the keratin fibres one or more times, rinsing them after each wash, ~~and optionally drying them;~~

~~said process also comprising, between steps c) and d), in the case of a permanent reshaping, the steps consisting in: i) applying an oxidizing composition to the keratin fibres; ii) leaving the oxidizing composition to stand on the keratin fibres for a time that is sufficient to obtain the desired reshaping; and iii) rinsing the keratin fibres with water to remove the oxidizing composition therefrom.~~

39. (currently amended) ~~Device or~~ "A kit" for bleaching keratin fibres, comprising: at least two compositions A and B intended to be mixed together to obtain a ready-to-use reducing composition, ~~characterized in that~~ wherein,

a) at least one of the said compositions A and B contains ~~one or more~~ at least one reducing agents and

b) at least one of the compositions A and B contains ~~one or more~~ at least one compounds ~~corresponding to the general~~ of formula (I) below:



~~in which~~ wherein:

- R ~~represents~~ is a group ~~CH₂OH or CO₂X group~~, and
- X ~~represents~~ is a hydrogen atom or a monovalent or divalent cation ~~derived~~ chosen from an alkali metal, ~~from an~~ alkaline-earth metal, ~~from a~~ transition metal, ~~or from an~~ organic amine, or an ammonium cation,

with the proviso that,

when the said compound of formula (I) is gluconic acid or a salt thereof, said reducing agent is chosen from cysteamine, or a ~~and the salts and~~ or esters thereof, a sulphites, a sulphinates ~~and~~ or a reductones, with the exception of ascorbic acid, ~~whereas~~ and,

when the compound is glucaric acid, said reducing agent is not cysteine or a salt thereof.

40. (currently amended) ~~A Device or~~ "kit" for permanently reshaping keratin fibres, comprising:

a) ~~firstly,~~ either a ready-to-use reducing composition A or at least two compositions A' and B' intended to be mixed together to obtain a ready-to-use reducing composition, ~~either a composition A or at least two compositions A' and B' intended to be mixed together to obtain a ready-to-use reducing composition~~ and,

b) ~~secondly,~~ a ready-to-use oxidizing composition C or at least two compositions D and E intended to be mixed together to obtain a ready-to-use oxidizing composition, ~~characterized in that~~ wherein,

(i) either said composition A or said at least one of the compositions A' and B' contains at least one one or more reducing agents, and ~~either composition A, or~~

(ii) either said composition A or said at least one of the compositions A' and B' contains at least one or more compounds corresponding to the general of formula (I) below:



~~in which~~ wherein:

- R ~~represents~~ is a ~~group~~ -CH₂OH or CO₂X group, and
- X ~~represents~~ is a hydrogen atom or a monovalent or divalent cation ~~derived~~ chosen from an alkali metal, ~~from an alkaline-earth metal, from a transition metal, or from an organic amine, or an ammonium cation,~~

with the proviso that,

when ~~the~~ said compound of formula (I) is gluconic acid or a salt thereof, said reducing agent is ~~chosen from~~ cysteamine and ~~theor~~ a salts and/or esters thereof, a sulphites, a sulphinates and/or a reductones, with the exception of ascorbic acid, ~~whereas~~ and,

when ~~the~~ said compound of formula (I) is glucaric acid, said reducing agent is not cysteine or a salt thereof.

41. (canceled)

42. (new) The composition of claim 34, wherein said compound of formula (I) is present in an amount of from 0.001% to 5% by weight relative to the total weight of said composition.

43. (new) The composition of claim 35, wherein said reducing agent is present in an amount of from 0.5% to 20% by weight relative to the total weight of said composition.

44. (new) The composition of claim 22, further comprising a cationic or amphoteric conditioning polymer.

45. (new) The composition of claim 44, wherein said cationic or amphoteric conditioning polymer is present in an amount of from 0.01% to 10% by weight relative to the total weight of said composition.

46. (new) The composition of claim 45, wherein said cationic or amphoteric conditioning polymer is present in an amount of from 0.05% to 5% by weight relative to the total weight of said composition.

47. (new) The composition of claim 22, further comprising an amphiphilic polymer which is non-ionic, anionic, cationic, or amphoteric, wherein said amphiphilic polymer comprises a hydrophobic chain.

48. (new) The composition of claim 47, wherein said amphiphilic polymer is present in an amount of from 0.05% to 20% by weight relative to the total weight of said composition.

49. (new) The composition of claim 48, wherein said amphiphilic polymer is present in an amount of from 0.1% to 10% by weight relative to the total weight of said composition.

50. (new) The composition of claim 22, further comprising a surfactant.

51. (new) The composition of claim 50, wherein said surfactant is present in an amount of from 0.01% to 40% by weight relative to the total weight of said composition.

52. (new) The composition of claim 51, wherein said surfactant is present in an amount of from 0.1% to 30% by weight relative to the total weight of said composition.

53. (new) The composition of claim 22, further comprising a rheology modifier other than the amphiphilic polymer of claim 47.

54. (new) The composition of claim 53, wherein said rheology modifier is present in an amount of from 0.05% to 20% by weight relative to the total weight of said composition.

55. (new) The composition of claim 54, wherein said rheology modifier is present in an amount of from 0.1% to 10% by weight relative to the total weight of said composition.

56. (new) The composition of claim 22, further comprising an acidifying or basifying agent.

57. (new) The composition of claim 56, wherein said acidifying or basifying agent is present in an amount of from 0.01% to 30% by weight relative to the total weight of said composition.

58. (new) The composition of claim 22, further comprising a solvent.

59. (new) The composition of claim 58, wherein said solvent is water or a mixture composed of water and a cosmetically acceptable organic solvent.

60. (new) The composition of claim 58, wherein said solvent is present in an amount of from 0.5% to 20% by weight relative to the total weight of said composition.

61. (new) The composition of claim 60, wherein said solvent is present in an amount of from 2% to 10% by weight relative to the total weight of said composition.

62. (new) The composition of claim 22, further comprising an adjuvant chosen from a mineral or organic filler, a binder, a lubricant, an antifoam, a silicone, a dye, a mating agent, a preserving agent or a fragrance.

63. (new) The method of claim 38, further comprising the step of drying said keratin fibres.

64. (new) A method of permanently reshaping keratin fibres, comprising the steps of:

a) applying to said keratin fibres a reducing composition of claim 22;

b) leaving said reducing composition on said keratin fibres for a sufficient time to obtain the desired permanent reshaping;

c) rinsing said keratin fibres to remove said reducing composition therefrom;

d) applying an oxidizing composition to said keratin fibres;

e) leaving said oxidizing composition on said keratin fibres for a sufficient time to obtain the desired reshaping;

f) rinsing said keratin fibres with water to remove said oxidizing composition therefrom;

g) washing said keratin fibres one or more times, rinsing them after each wash.

65. (new) The method of claim 64, further comprising the step of drying said keratin fibres.

66. (new) The method of claim 14, wherein said cationic or amphoteric conditioning polymer is present in an amount from 0.05% to 5% by weight relative to the total weight of said composition.

67. (new) The method of claim 15, wherein said amphiphilic polymer is present in an amount from 0.05% to 20% by weight relative to the total weight of said composition.

68. (new) The method of claim 67, wherein said amphiphilic polymer is present in an amount from 0.01% to 10% by weight relative to the total weight of said composition.

69. (new) The method of claim 16, wherein said surfactant is present in an amount from 0.01% to 40% by weight relative to the total weight of said composition.

70. (new) The method of claim 69, wherein said surfactant is present in an amount from 0.1% to 30% by weight relative to the total weight of said composition.

71. (new) The method of claim 17, wherein said rheology modifier is present in an amount from 0.05% to 20% by weight relative to the total weight of said composition.

72. (new) The method of claim 71, wherein said rheology modifier is present in an amount from 0.1% to 10% by weight relative to the total weight of said composition.

73. (new) The method of claim 18, wherein said acidifying or basifying agent is present in an amount from 0.01% to 30% by weight relative to the total weight of said composition.

74. (new) The method of claim 19, wherein said solvent is present in an amount from 0.5% to 20% by weight relative to the total weight of said composition.

75. (new) The method of claim 74, wherein said solvent is present in an amount from 2% to 10% by weight relative to the total weight of said composition.

76. (new) The method of claim 21, wherein said human keratin fibre is hair.

77. (new) The method of claim 1, further comprising the step of applying said reducing composition to said keratin fibres.